

CLAIMS

1. An apparatus for generating Oxygen, comprising:

a vessel; and

an aqueous, Oxygen producing solution contained in the  
5 vessel, wherein a resulting waste solution is at least non-toxic and wherein the resulting waste solution is at least not an environmental hazard.

2. The apparatus of Claim 1, wherein the aqueous,  
10 Oxygen producing solution further comprises a reactant selected from the group consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \bullet 3\text{H}_2\text{O}_2$ ) or Sodium Perborate ( $\text{NaBHO}_3$ ) dissolved in water.

3. The apparatus of Claim 1 or 2, wherein the aqueous,  
15 Oxygen producing solution further comprises a water-soluble catalyst, wherein the water-soluble catalyst is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

20

4. The apparatus of Claims 1, wherein the aqueous, Oxygen producing solution further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

5. The apparatus of Claims 3, wherein the water-soluble catalyst further comprises a mixture of Manganese Dioxide ( $MnO_2$ ) and Sodium Carbonate ( $Na_2CO_3$ ).

5 6. The apparatus of Claims 1, wherein the aqueous, Oxygen producing solution further comprises a catalyst of metal oxide.

7. The apparatus of Claims 3, wherein the water-soluble  
10 catalyst further comprises a metal oxide.

8. The apparatus of Claim 1, wherein the apparatus further comprises a humidifier at least configured to be coupled to the vessel.

15

9. The apparatus of Claim 8, wherein the apparatus further comprises a carrier tube at least configured to be attached the humidifier.

20 10. An apparatus for generating Oxygen, comprising:  
a vessel to at least contain an aqueous reaction; and  
a water-soluble reactant to at least be used as an Oxygen producing reactant in the aqueous reaction, wherein the water-soluble reactant is at least be non-toxic, at least not an

environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having long shelf-life.

11. The apparatus of Claim 10, wherein the water-soluble  
5 reactant further comprises a reactant selected from the group  
consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \bullet 3\text{H}_2\text{O}_2$ ) or Sodium  
Perborate ( $\text{NaBHO}_3$ ) dissolved in water.

12. The apparatus of Claim 10 or 11, wherein apparatus  
10 further comprises a water-soluble catalyst, wherein the water-  
soluble catalyst is at least non-toxic, at least not an  
environmental hazard, at least not an explosive hazard, at  
least not a fire hazard, and at least having long shelf-life.

15 13. The apparatus of Claims 10, wherein apparatus  
further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and  
Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

14. The apparatus of Claims 12, wherein the water-  
20 soluble catalyst further comprises a mixture of Manganese  
Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

15. The apparatus of Claims 10, wherein apparatus  
further comprises a catalyst of metal oxide.

16. The apparatus of Claims 12, wherein the water-soluble catalyst further comprises a metal oxide.

17. The apparatus of Claim 10, wherein the apparatus  
5 further comprises a humidifier at least configured to be  
coupled to the vessel.

18. The apparatus of Claim 17, wherein the apparatus  
further comprises a carrier tube at least configured to be  
10 attached the humidifier.

19. An apparatus for generating Oxygen, comprising:  
a vessel to at least contain an aqueous reaction;  
a water-soluble powder or liquid at least to be used as a  
15 reactant in the aqueous reaction, wherein the water-soluble  
powder is at least non-toxic, at least not an environmental  
hazard, at least not an explosive hazard, at least not a fire  
hazard, and at least having a long shelf-life; and  
a water-soluble catalyst, wherein the water-soluble  
20 powder is at least non-toxic, at least not an environmental  
hazard, at least not an explosive hazard, at least not a fire  
hazard, and at least having a long shelf-life.

20. The apparatus of Claim 19, wherein the water-soluble  
25 powder or liquid further comprises a reactant selected from

the group consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \bullet 3\text{H}_2\text{O}_2$ ) or Sodium Perborate ( $\text{NaBHO}_3$ ) dissolved in water.

21. The apparatus of Claim 19 or 20, wherein the water-  
5 soluble powder or liquid further comprises a water-soluble catalyst, wherein the water-soluble catalyst is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

10

22. The apparatus of Claims 19, wherein the water-soluble catalyst further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

15

23. The apparatus of Claims 21, wherein the water-soluble catalyst further comprises a mixture of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

20

24. The apparatus of Claims 19, wherein water-soluble catalyst further comprises a catalyst of metal oxide.

25. The apparatus of Claims 21, wherein the water-soluble catalyst further comprises a metal oxide.

26. The apparatus of Claim 19, wherein the apparatus further comprises a humidifier at least configured to be coupled to the vessel.

5 27. The apparatus of Claim 26, wherein the apparatus further comprises a carrier tube at least configured to be attached the humidifier.

10 28. A method for operating an Oxygen producing generator, comprising:

filling a vessel with water;  
dissolving a water-soluble powder or liquid at least used as a Oxygen producing reactant, wherein the water-soluble powder is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

29. The method of Claim 28, wherein a the method further comprises:

20 dissolving a water-soluble catalyst after the water-soluble powder is dissolved, wherein the water-soluble powder is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

30. The method of Claim 28, wherein a the method further comprises:

dissolving a water-soluble catalyst simultaneously with the water-soluble powder, wherein the water-soluble powder is  
5 at least non-toxic, at least not an environmental hazard, at least configured not an explosive hazard, at least not a fire hazard, and at least having long shelf-life.